HEMATITE FUEL FABRICATION FACILITY, PELLET PLANT
(Building No. 254)
3300 State Road P
Festus
Jefferson County
Missouri

HAER MO-113-K
MO-113-K

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

HEMATITE FUEL FABRICATION FACILITY
BUILDING 254
(Pellet Plant)

HAER No. MO-113-K

Location: 3300 State Road P
Festus, Jefferson County, Missouri

Present Owner: Westinghouse Electric Company Limited Liability Corporation (LLC)

Present Use: Abandoned: in process of deactivation for removal of hazardous substances, and preparation for decommissioning and demolition.

Significance: The Hematite Fuel Fabrication Facility, also known as Hematite Former Fuel Cycle Facility and the Westinghouse Electric Company Hematite Facility, was constructed over a period of thirty-one years. The Facility was the first privately owned and operated uranium fuel production plant in the United States. The plant produced nuclear fuel for military as well as peacetime purposes throughout the "Cold War" era.

The Hematite Fuel Fabrication Facility produced high-enriched nuclear fuel for the U.S. Navy nuclear submarine program and other reactor programs during the "Cold War" years of 1956 to 1974. After 1974 the Facility produce only commercial grade low enriched uranium for commercial nuclear power facilities.

PART I. HISTORICAL INFORMATION

A. Physical History

1. **Date of Construction:** Unknown

2. **Architect:** The architect for this building is unknown.

3. **Owners, Occupants and Uses:** Owners include: Mallinckrodt Chemical Works, United Nuclear Corporation, Gulf United Nuclear Fuels Corporation, Combustion Engineering Corporation, Asa Brown Boveri (ABB), and Westinghouse Electric Company, LLC. Building 254 is used for pellet production

4. **Builder-Contractor:** The contractor is unknown.

5. **Original Plans and Construction:** Location of original plans are held by Westinghouse Electric Company LLC.

6. **Alterations and Additions:** There have been no additions or alterations made to this building.

B. Historical Context

Building 254, the Pellet Plant, housed the operation that produced granules of UO2 (uranium oxide U3O8). The granules were fed into a micronizer which produced a fine powder. A starch and dye lubricant was added and blended into the powder (batch) and subsequently pressed into pellets. The "Green" fuel pellets were sent through a dewaxing furnace to burn off the additives and passed through a sintering furnace; this process turned the pellets into ceramic fuel. The furnaces were electrically heated and used disassociated ammonia to provide a reducing atmosphere.

PART II. ARCHITECTURAL INFORMATION

A. General Statement

1. **Architectural Character:** Modern industrial

2. **Condition of Fabric:** Fair condition

B. Description of Exterior

1. **Overall dimensions:** The first floor measures 81'-3" x 177"-6" measuring 15,130 square feet. The second floor measures (1) 81'-3" x 32' (2) 81'-3" x 12' (3) 81'-3" x 25', and the third floor measures 81'-3" x 32." The second and third floor combined have 8,343 square feet. There are 23,473 total square feet in Building 254

2. **Foundation:** Concrete

3. **Walls:** Painted concrete block walls

4. **Structural system, framing:** Steel

5. **Porches:** There are no porches.

6. **Chimneys:** There are no chimneys.

7. **Openings:**

   a. **Doorways and Doors:** There are two exterior doors, one on the north, and one on the west side of the building.

   b. **Windows:** There are no windows.

8. **Roof:**

   a. **Shape, covering:** Flat roof, metal sheathing on concrete

   b. **Cornice, eaves:** There are no cornices or eaves.

   c. **Dormers, cupolas, towers:** There are no dormers, cupolas, or towers.

C. **Description of Interior**

1. **Floor plans:** Building 254 consists of one open area in the center and small rooms on the north and south of building.

2. **Stairways:** There are steel stairways leading from the first floor to the second floor, and the second floor to the third.

3. **Flooring:** All three floors are constructed of concrete.

4. **Wall and ceiling finish:** Painted concrete block walls, open ceiling with exposed steel

5. **Openings:** Building 254 opens into Buildings 253 on the west, 255 on the east, and 256-1 on the south.

6. **Decorative features:** There are no decorative features.

7. **Hardware:** Modern

8. **Mechanical equipment:**

   a. **Heating, air conditioning, ventilation:** Modern heating and cooling system

   b. **Lighting:** Fluorescent

   c. **Plumbing:** There is plumbing.

D. **Site**

1. **General setting and orientation:** Building 254 is connected to Building 253 on the west, 256-1 on the south, 255 on the east and State Road P is on the north.

2. **Historic landscape design:** Vernacular landscape

PART III. SOURCES OF INFORMATION

A. Architectural drawings: The original plans are currently held by Westinghouse Electric Company Limited Liability Corporation (LLC).

B. Bibliography:

Malich, Phillip J. *034-JE-02 Proposed Hematite Former Fuel Processing Facility.* Missouri Department of Natural Resources, State Historic Preservation Office, Jefferson City, Missouri, 2002.

PART IV. PROJECT INFORMATION

This Historic American Engineering Record (HAER) documentation project was undertaken due to the owner's desire to decommission the Facility. The Facility will be disassembled (this is being done for safety purposes and the work is being done in accordance with federal law and regulations regarding hazardous waste clean-up and disposal). In 2003, Westinghouse Electric Company, LLC, hired SCI Engineering, Inc., of St. Charles, Missouri, to complete the HAER documentation of the Hematite Fuel Fabrication Facility. Dr. Steve Dasovich supervised the project and Historian Colleen Small-Vollman authored the HAER documentation report. The report was compiled by Susan Sheppard. Bruce Meyer and Todd Kapler completed the photographic documentation of the Facility, and Asa Westphal completed the floor plan drawings.